

AMENDMENTS TO THE CLAIMS:

1.(previously amended): A CDMA receiver for applying despread processing to direct wave or delayed waves that arrive via each path of multiple paths, applying synchronous detection processing to the despread signals obtained, combining the detection signals of respective paths and discriminating the received data on the basis of the combined signal, comprising:

a weighting unit provided for each path, wherein if a prescribed signal component of a direct wave or delayed wave that arrives via an assigned path is below a set level (breakpoint level), said weighting unit applies weighting by multiplying the output signal by a weighting coefficient the value of which is smaller than 1 and conforms to the level of said signal component;

a combiner for combining signals output from the weighting units of each of the paths; and

a data discriminating unit for discriminating received data based upon the output signal of the combiner.

2.(original) A CDMA receiver according to claim 1, wherein the weighting unit adopts 1 as a weighting coefficient if said signal component is greater than a set level.

3.(original) A CDMA receiver according to claim 1, wherein M^{-N} is adopted as a weighting coefficient and the smaller said signal component becomes in comparison with the set level, the larger N is made.

4.(original) A CDMA receiver according to claim 1, wherein when reception power is adopted as said signal component, said weighting unit averages pilot signals, which are contained in the received signal, over one or more slots, calculates reception power using the average value, decides a weighting coefficient based upon a difference or ratio between said reception power and a set power, which is said set level, and weights the output signal.

5.(original) A CDMA receiver according to claim 4, wherein said weighting unit multiplies an information signal by the weighting coefficient at the time of synchronous detection, thereby weighting the output.

6.(original) A CDMA receiver according to claim 4, wherein said weighting unit multiplies the detection signal, which prevails after synchronous detection, by a weighting coefficient, thereby weighting the output signal.

7.(original) A CDMA receiver according to claim 1, wherein when reception power is adopted as said signal component, said weighting unit averages information signals, which are contained in the received signal, over one or more slots, calculates reception power using the average value, decides a weighting coefficient based upon a difference or ratio between said reception power and a set power, which is said set level, and weights the output signal.

8.(original) A CDMA receiver according to claim 1, further comprising:
a maximum-level detector for detecting a maximum level P_{max} of reception powers of respective ones of the paths when reception power is adopted as said signal

component; and

a set-level updating unit for adopting a value, which is obtained by subtracting a set level AY from the maximum level P_{max} , as said set level.

9.(original) A CDMA receiver according to claim 1, further comprising:

a minimum-level detector for detecting a minimum level P_{min} of reception powers of respective ones of the paths when reception power is adopted as said signal component; and

a set-level updating unit for adopting a value, which is obtained by adding a set level AZ to the minimum level P_{min} , as said set level.

10.(original) A CDMA receiver according to claim 1, wherein when a SIR, which is a ratio between signal power and interference power, is adopted as said signal component, said weighting unit estimates the SIR of the assigned path, decides a weighting coefficient based upon a difference or ratio between said estimated SIR and a set SIR, which is the set level, and weights the output signal.

11.(original) A CDMA receiver according to claim 10, further comprising:

an error-rate detector for detecting error rate of discriminated data;

a transmission power controller for controlling transmission power of a transmitter in such a manner that the estimated SIR becomes a reference SIR; and

a set-SIR updating unit for updating said set SIR when said reference SIR is updated in such a manner that the error rate becomes a set value.

12.(original) A CDMA receiver according to claim 1, wherein when an average of absolute values of orthogonal signal components (I-signal component, Q-signal component) of a pilot signal contained in the received signal is adopted as said signal component, said weighting unit averages pilot signals over one or more slots, calculates an average of absolute values of said orthogonal signal components using said average value, decides a weighting coefficient based upon a difference or ratio between the average of said absolute signals and a set average, which is the set level, and weights the output signal.

13.(original) A CDMA receiver according to claim 1, wherein when the larger of absolute values of orthogonal signal components (I-signal component, Q-signal component) of a pilot signal contained in the received signal is adopted as said signal component, said weighting unit averages pilot signals over one or more slots, decides a weighting coefficient based upon a difference or ratio between the larger absolute value of the orthogonal signals (I-signal component, Q-signal component) and a set absolute value, which is the set level, and weights the output signal.

14.(original) A CDMA receiver according to claim 1, wherein the lower the transmission rate of a symbol becomes and the greater a spreading gain, the lower said set level is made.

15.(original) A CDMA receiver according to claim 1, further comprising a reception power calculation unit for multiplying the combined signal by the reciprocal of maximum

weighting among the weightings of respective paths, thereby calculating reception power.

16.(original) A CDMA receiver according to claim 1, further comprising a searcher for detecting multipath, wherein said searcher decides a weighting coefficient applied to an output signal of each path, and said weighting unit multiplies the output signal of each path by said weighting coefficient.

17.(New): A CDMA receiver for applying despread processing to direct wave or delayed waves that arrive via each path of multiple paths, applying synchronous detection processing to the despread signals obtained, combining the detection signals of respective paths and discriminating the received data on the basis of the combined signal, comprising:

a weighting unit provided for each path, wherein if a prescribed signal component of a direct wave or delayed wave that arrives via an assigned path is below a set level, said weighting unit applies weighting, which conforms to the level of said signal component, to an output signal;

a combiner for combining signals output from the weighting units of each of the paths; and

a data discriminating unit for discriminating received data based upon the output signal of the combiner.

18.(New): A CDMA receiver according to claim 17, wherein the weighting unit adopts 1 as a weighting coefficient if said signal component is greater than a set level.

19.(New): A CDMA receiver according to claim 17, wherein M^{-N} is adopted as a weighting coefficient and the smaller said signal component becomes in comparison with the set level, the larger N is made.

20.(New): A CDMA receiver according to claim 17, wherein when reception power is adopted as said signal component, said weighting unit averages pilot signals, which are contained in the received signal, over one or more slots, calculates reception power using the average value, decides a weighting coefficient based upon a difference or ratio between said reception power and a set power, which is said set level, and weights the output signal.

21.(New): A CDMA receiver according to claim 20, wherein said weighting unit multiplies an information signal by the weighting coefficient at the time of synchronous detection, thereby weighting the output.

22.(New): A CDMA receiver according to claim 20, wherein said weighting unit multiplies the detection signal, which prevails after synchronous detection, by a weighting coefficient, thereby weighting the output signal.

23.(New): A CDMA receiver according to claim 17, wherein when reception power is adopted as said signal component, said weighting unit averages information signals, which are contained in the received signal, over one or more slots, calculates reception power using the average value, decides a weighting coefficient based upon a difference or ratio between said reception power and a set power, which is said set level, and weights the output signal.

24.(New): A CDMA receiver according to claim 17, further comprising:

a maximum-level detector for detecting a maximum level P_{\max} of reception powers of respective ones of the paths when reception power is adopted as said signal component; and

a set-level updating unit for adopting a value, which is obtained by subtracting a set level A_Y from the maximum level P_{\max} , as said set level.

25.(New): A CDMA receiver according to claim 17, further comprising:

a minimum-level detector for detecting a minimum level P_{\min} of reception powers of respective ones of the paths when reception power is adopted as said signal component; and

a set-level updating unit for adopting a value, which is obtained by adding a set level A_Z to the minimum level P_{\min} , as said set level.

26.(New): A CDMA receiver according to claim 17, wherein when a SIR, which is a ratio between signal power and interference power, is adopted as said signal component, said weighting unit estimates the SIR of the assigned path, decides a weighting coefficient based upon a difference or ratio between said estimated SIR and a set SIR, which is the set level, and weights the output signal.

27.(New): A CDMA receiver according to claim 26, further comprising:

an error-rate detector for detecting error rate of discriminated data;

a transmission power controller for controlling transmission power of a transmitter in such a manner that the estimated SIR becomes a reference SIR; and

a set-SIR updating unit for updating said set SIR when said reference SIR is updated in such a manner that the error rate becomes a set value.

28.(New): A CDMA receiver according to claim 17, wherein when an average of absolute values of orthogonal signal components (I-signal component, Q-signal component) of a pilot signal contained in the received signal is adopted as said signal component, said weighting unit averages pilot signals over one or more slots, calculates an average of absolute values of said orthogonal signal components using said average value, decides a weighting coefficient based upon a difference or ratio between the average of said absolute signals and a set average, which is the set level, and weights the output signal.

29.(New): A CDMA receiver according to claim 17, wherein when the larger of absolute values of orthogonal signal components (I-signal component, Q-signal component) of a pilot signal contained in the received signal is adopted as said signal component, said weighting unit averages pilot signals over one or more slots, decides a weighting coefficient based upon a difference or ratio between the larger absolute value of the orthogonal signals (I-signal component, Q-signal component) and a set absolute value, which is the set level, and weights the output signal.

30.(New): A CDMA receiver according to claim 17, wherein the lower the transmission rate of a symbol becomes and the greater a spreading gain, the lower said set level

is made.

31.(New): A CDMA receiver according to claim 17, further comprising a reception power calculation unit for multiplying the combined signal by the reciprocal of maximum weighting among the weightings of respective paths, thereby calculating reception power.

32.(New): A CDMA receiver according to claim 17, further comprising a searcher for detecting multipath, wherein said searcher decides a weighting coefficient applied to an output signal of each path, and said weighting unit multiplies the output signal of each path by said weighting coefficient.

33.(New): A CDMA receiver, comprising:

- means for applying despread processing to first and second reception signals at least that arrive via paths at respective timings;
- a weighting means for deciding first and second weighting coefficients for the first and second despread reception signals based upon the level of the power of said first and second reception signals and applying weighting to the first and second despread reception signals using the first and second weighting coefficients; and
- means for combining the weighted and despread reception signals in accordance with power maximal ratio combining,

wherein in a case where the power of the first reception signal is smaller than that of the second reception signal, the first weighting coefficient is smaller than the second weighting coefficient.